

Solving the Human Health Crisis in Kabwe, Zambia--one of the most contaminated cities on Earth

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The post-colonial landscape of sub-Saharan Africa is littered with environmental issues both large and small, including mining wastes. In some cases, widespread contamination is a serious impediment to development. In addition, the victims of much of the environmental contamination live in low-income, often unplanned communities with populations that have been traditionally overlooked and under-represented in governmental decision making.

We are developing and implementing community-based participatory research models targeted on the wide-spread lead (Pb) contamination and exposure issues in and around Kabwe, Zambia. Poor mining and environmental practices have left entire communities so contaminated with Pb that children are almost universally Pb-poisoned, as are many of the adults. Kabwe is an appropriate target for this work because although the general pattern of Pb contamination of soils is known, little work has been done on exposure via air, food, and water. Furthermore, the affected communities have not been engaged in defining the problem or the mitigation options, thus limiting the impact and sustainability of mitigation efforts. To date, we find that over 80% of interior home dust samples exceeded the EPA indoor dust standard for Pb loading. Additionally, the net Pb concentration of this dust roughly reflects the Pb concentration from surrounding soils, and not just the home properties themselves. Thus, unless soil removal or mitigation is done at the block+ scale, the full environmental health benefits from mitigation will not be realized.